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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/554,286	10/25/2005	Friedrich Linhart	278601US0PCT	3259

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EXAMINER
WALTERS JR, ROBERT S

ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
03/26/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/554,286	LINHART ET AL.	
	Examiner	Art Unit	
	ROBERT S. WALTERS JR	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7 and 9-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

Claim 8 is cancelled. Claims 1-7 and 9-20 are pending and presented for examination.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/16/2009 has been entered.

Response to Arguments

Applicant's arguments with respect to claims 1-7 and 9-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 1-7 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Momma et al. (U.S. Pat. No. 5798173) in view of Dyllick-Brenzinger et al. (U.S. Pat. No. 6132558) and Smigo et al. (U.S. Pat. No. 5281307).

I. Regarding claims 1-6, 11, 12 and 16-18, Momma teaches a process for improving the printability of paper and paper products by enhancing the water-resistance of ink-jet printed images (column 1, lines 5-13 and column 2, lines 39-42) by treating the paper with an aqueous solution comprising a cationic polymer (column 3, lines 26-30) wherein the polymer has positive

charge providing units consisting essentially of vinylamine units (see Preparation Example 1 and Example 1, columns 5 and 6) and is used as the sole treatment composition (see Example 20, column 8). Momma further teaches applying the solution in an amount of 0.3 g/m^2 to 10 g/m^2 by size press (see Example 20, column 8). Finally, Momma teaches the polymer has a molecular weight of at least 50,000 or more (column 4, lines 1-9), and that it can be a hydrolyzed copolymer of N-vinylformamide with acrylonitrile (see Preparation Example 1, column 5).

Momma fails to teach the charge density of the polymer or the polymer's degree of hydrolysis or a molar mass of from 100000-2000000 Dalton.

Dyllick-Brenzinger teaches the use of cationic polymers comprising vinyl amine units with a molar mass of 5000 to 3 million (see claim 1), where the cationic polymers are partially or completely hydrolyzed polymers of N-vinylformamide having a charge density of from 4-18 meq/g (see claim 8), and are used as additives that increase the drainage rate of pulp in the papermaking process (see Tables 1-3). Dyllick-Brenzinger further teaches that the polymer can actually be a copolymer of N-vinylformamide with acrylonitrile (column 3, lines 8-46). The polymers having a charge density of greater than 3 meq/g dramatically decrease the drainage time of the pulp (see Table 2, Comp Ex 1.1 with a charge density of only 1.7 as compared to Ex 1c with the addition of a polyvinylamine containing polymer having a charge density of 16.5 meq/g), therefore one of ordinary skill in the art at the time of the invention would expect that they are imparting an enhanced water resistance to the pulp fibers thereby pushing water away from the pulp.

Smigo teaches that various additives, such as drainage agents are applied to pulp slurries in paper fabrication (column 1, lines 29-34) and that these agents are also commonly added at the

dry-end of the papermaking process to penetrate the fabricated paper by size press addition (column 1, lines 55-58).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Momma's method by using the copolymers of N-vinylformamide having a specified charge density of from 4 to 18, as is taught by Dyllick-Brenzinger. One would have been motivated to make this modification as Smigo actually teaches that conventional additives utilized during the processing of the pulp are also often coated on the paper at the end of the papermaking process. Further, one of ordinary skill in the art at the time of the invention could have utilized Dyllick-Brenzinger's polymers having a specified charge density with a reasonable expectation of success (given the similarities between Momma's polymers and Dyllick-Brenzinger's polymers, as well as Smigo's teaching that drainage agents are often utilized to coat finished paper products) and the predictable result of providing a paper product having enhanced water and light resistance.

II. Regarding claims 7, 9 and 10, Momma in view of Dyllick-Brenzinger and Smigo teach all the limitations of the process, and Momma further teaches an ink-jet paper product obtained by the process (abstract).

III. Regarding claims 13-15, Momma in view of Dyllick-Brenzinger and Smigo teach all the limitations of claim 1, but fail to teach the viscosity of the aqueous solution. However, it would have been obvious to one of ordinary skill in the art at the time of the invention that the viscosity of the solution would alter the ability of the solution to infiltrate the paper as well as the ability

of the solution to be coated. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed ranges through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

IV. Regarding claims 19 and 20, Momma in view of Dyllick-Brenzinger and Smigo teach all the limitations of claim 1 including utilizing partially hydrolyzed copolymers of N-vinylformamide (see above). Momma in view of Dyllick-Brenzinger and Smigo fail to teach the specific degree of hydrolysis as is claimed. However, it would have been obvious to one of ordinary skill in the art at the time of the invention that the degree of hydrolysis would determine the charge density of the polymer and therefore its effectiveness as a coating for improving printability by enhancing water resistance. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed ranges through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPA 1980).

Conclusion

Claims 1-7 and 9-20 are pending.

Claims 1-7 and 9-20 are rejected.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Friday, 8:00am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art Unit 1792

/ROBERT S. WALTERS JR/
March 19, 2009
Examiner, Art Unit 1792